



**Saskatchewan
Parks and
Renewable
Resources**

Forestry Division

Saskatchewan Dutch Elm Disease Surveillance Program 1986



Technical Report 87-1

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**SASKATCHEWAN
DUTCH ELM DISEASE
SURVEILLANCE PROGRAM
1986**

**Forestry Division
Saskatchewan Parks & Renewable Resources**



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INTRODUCTION

Dutch elm disease (DED) is the only known tree disease to become epidemic on a worldwide basis and is one of the most widely known plant diseases in the world.

The disease was first reported in United States in 1930 in the State of Ohio. Since then it has spread throughout the natural range of American elm in North America except in the province of Saskatchewan. (Map 1). In United States by 1968, the disease had crossed beyond the natural range of native elms and appeared in Colorado and Idaho. By 1980, DED had been confirmed in all of the Pacific Coast States.

In Canada, the Dutch Elm Disease appeared in Ontario and Quebec in 1945. Since then it has spread in all the Maritime provinces and in 1975 it was confirmed in Manitoba. The progressive spread of DED in Canada from 1945 to 1982 is shown in Map 2.

The disease is not yet present in Saskatchewan but is progressively spreading towards Saskatchewan from Manitoba and North Dakota in the United States. The presence of DED has been confirmed this year in Qu'Appelle River valley, at St. Lazare in Manitoba about 20 km. from Saskatchewan's eastern border and in the South in Souris River valley (Upper des Lacs Lake) in Montana just south of the town of Northgate on the southern border of Saskatchewan.

Disease Cycle

The highly destructive Dutch elm disease is caused by a fungus Ceratocystis ulmi. This fungus, when introduced into living elms, produces spores and blocks the water conducting vessels of the sapwood and causes the death of the tree. The disease is spread from infected to healthy elms by elm bark beetles. These beetles breed in the inner bark of dying or recently dead elms and become contaminated with spores of the fungus. When they emerge and fly to healthy elms to feed, they introduce the spores of the fungus into the tree initiating a new infection. This intimate relationship of the fungus and the elm bark beetle makes the disease cycle uniquely complex.

Symptoms and Signs

The early symptoms of the disease appear from the later half of June to the middle of July when the leaves on one or more branches may wilt, droop and curl. The leaves then turn brown and usually remain on the tree. If the tree is infected later in the summer, the leaves will droop, turn yellow and drop prematurely.

All of these symptoms are accompanied by brown streaks in the sapwood that can be seen by removing the bark of the infected branch. Other wilt causing fungi may also cause streaking of the wood, so this symptom requires positive diagnosis by a laboratory test.

Control

To date, there is no cure for Dutch elm disease and so far intensive sanitation is the only effective 'Dutch elm disease management' program to prevent or minimize the spread of the disease. The goals of this management program are:

- 1) to make systematic surveys for early detection;
- 2) felling and destroying diseased trees promptly after infection;
- 3) pruning dead branches that attract bark beetle vector; and
- 4) destroying all elm fuel wood, and restricting movement of elm firewood into Saskatchewan.

With our co-operative efforts through surveillance, early detection and public cooperation, we can all help ensure that Dutch elm disease does not have the opportunity to become established in Saskatchewan.

SASKATCHEWAN

DUTCH ELM DISEASE SURVEILLANCE PROGRAM

BACKGROUND

The natural distribution of American elm in North America extends into southeastern and central Saskatchewan (Map #1). Also about 15 million American and Siberian elm have been distributed by PFRA in Saskatchewan. The presence of Dutch Elm Disease (DED) in Manitoba and in North Dakota and its progressive spread towards Saskatchewan initiated the DED surveillance program by Saskatchewan Agriculture in 1976. A DED Advisory Committee was formed with members from Saskatchewan Agriculture, PFRA Tree Nursery, CFS and Regina City Parks. Limited surveys were done in southern parts of Saskatchewan from 1976-1980. In 1981 DPRR took over the program and extended it to cover all areas as far north as Prince Albert. In the same year, the DPRR crew discovered a DED infected elm in Regina which was immediately removed and burned by City staff.

This program, until 1985, had three distinct parts - the DED survey of elm trees and taking samples from suspect trees, the beetle distribution survey through traps, and the elm tree inventory. DPRR provided field staff, transportation, equipment, and aerial surveys (with assistance from Forest Protection branch) while PFRA cooperated in setting up the schedule for the survey, beetle trap locations, beetle identification, data collection and response to public enquiries.

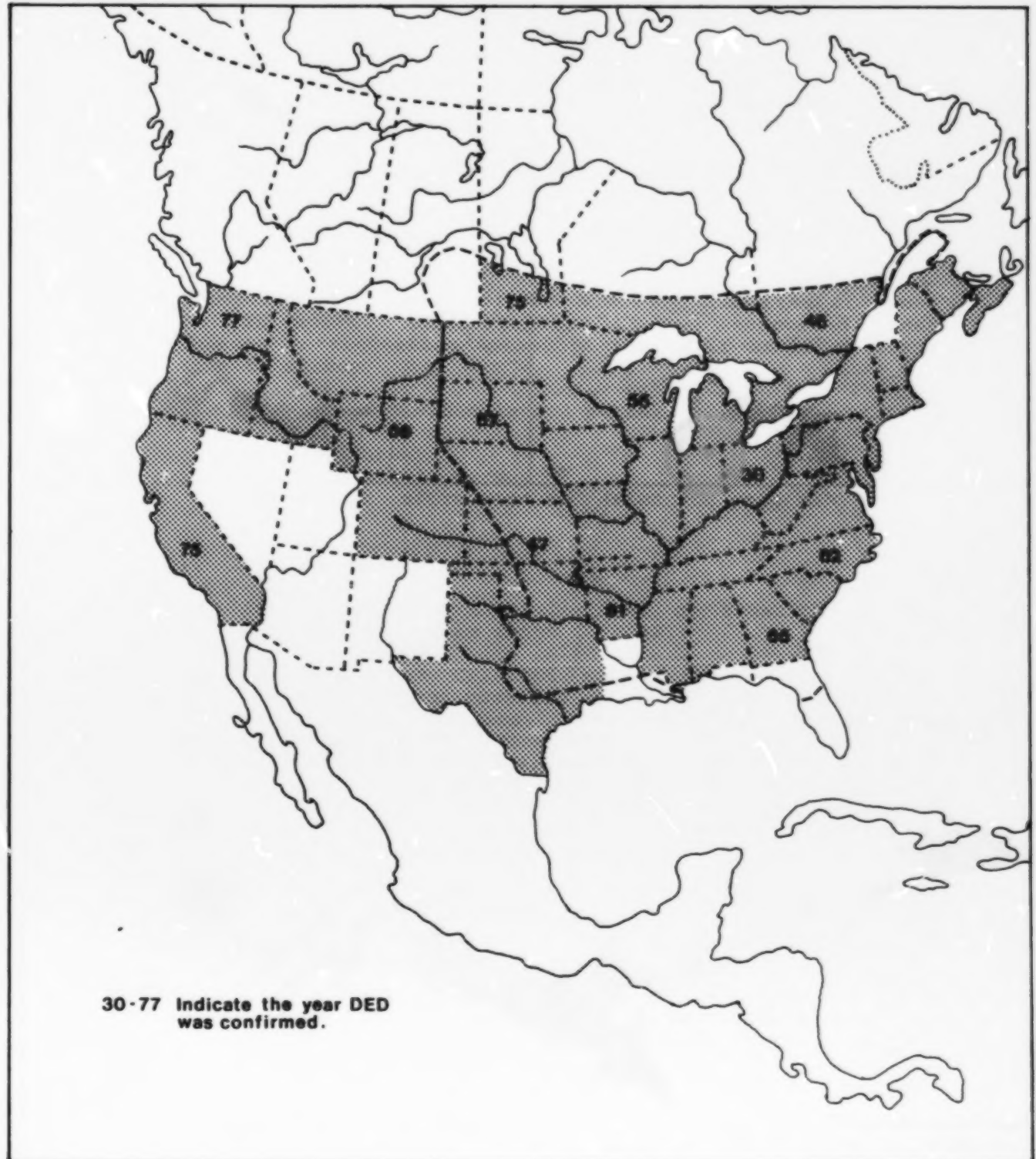
The City of Regina had been doing their own surveys since the inception of this program, and in 1985 Saskatoon and Prince Albert also started their own surveys.

The Regina Plant Disease laboratory of Saskatchewan Agriculture is involved in testing suspected samples, and sometimes the samples are also sent to Winnipeg, Manitoba for confirmation.

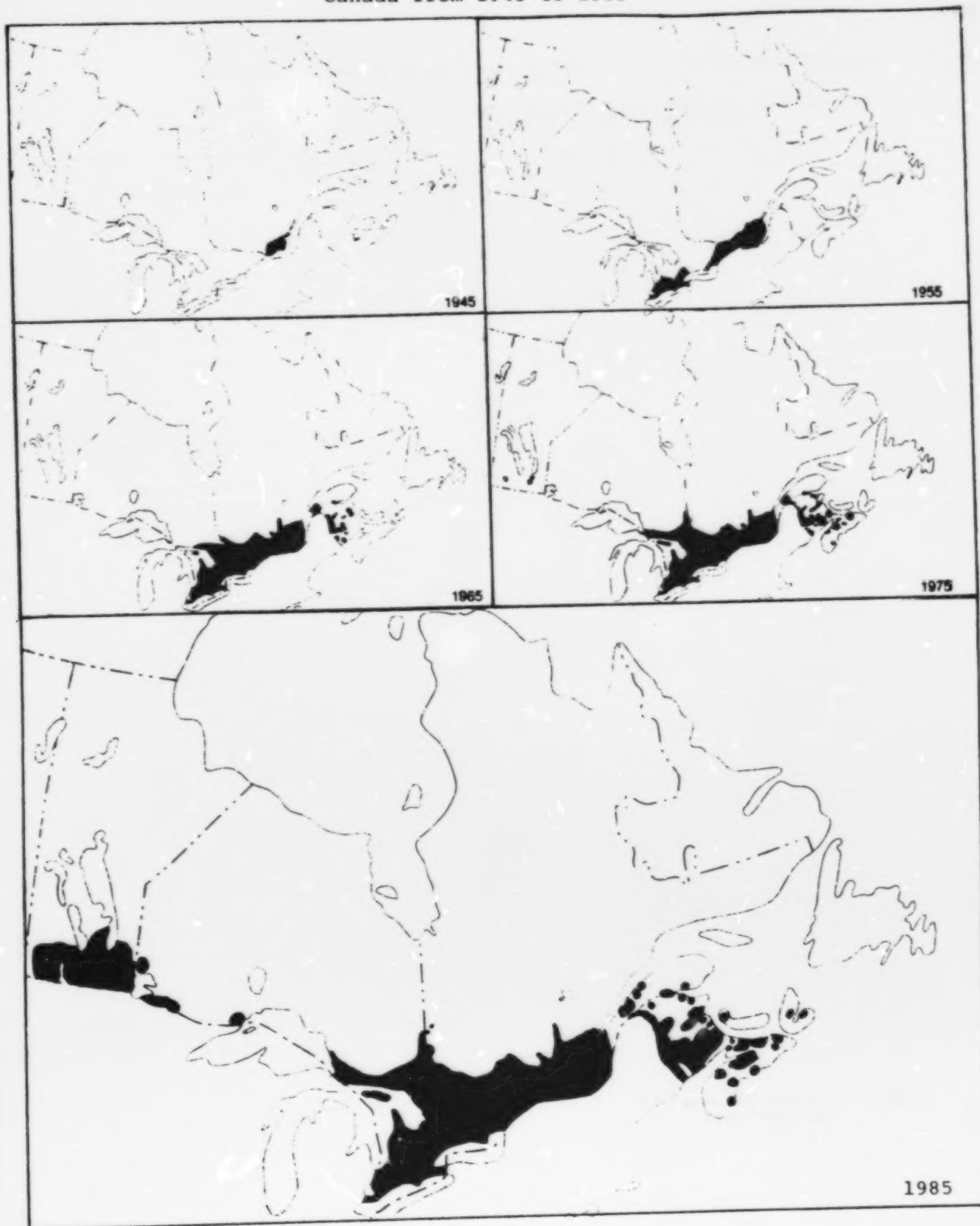
Map 1.

Shaded areas indicate distribution of Dutch elm disease in North America.

--- Indicate limits of natural range of American elm.



Map 2 - Progressive spread of Dutch Elm Disease in
Canada from 1945 to 1985



1986 PROGRAM REVIEW

In the fall of 1985, after the survey was completed, a review of the program took place between SPRR and PFRA and the survey staff. It was generally agreed that we have a good idea of where elm trees are, and roughly their numbers. In addition the distribution of the native elm bark beetle is documented, and it does not appear to be spreading at a significant rate.

On the other hand it was felt that the general public should be more aware of the disease, and an extension program should be developed. It was also felt that the cities and towns were willing to cooperate in this changed emphasis.

Changes were outlined to the Advisory Committee at Moose Jaw in April. DEDAC members further supported these changes in requesting workshops for their staff to train them to survey.

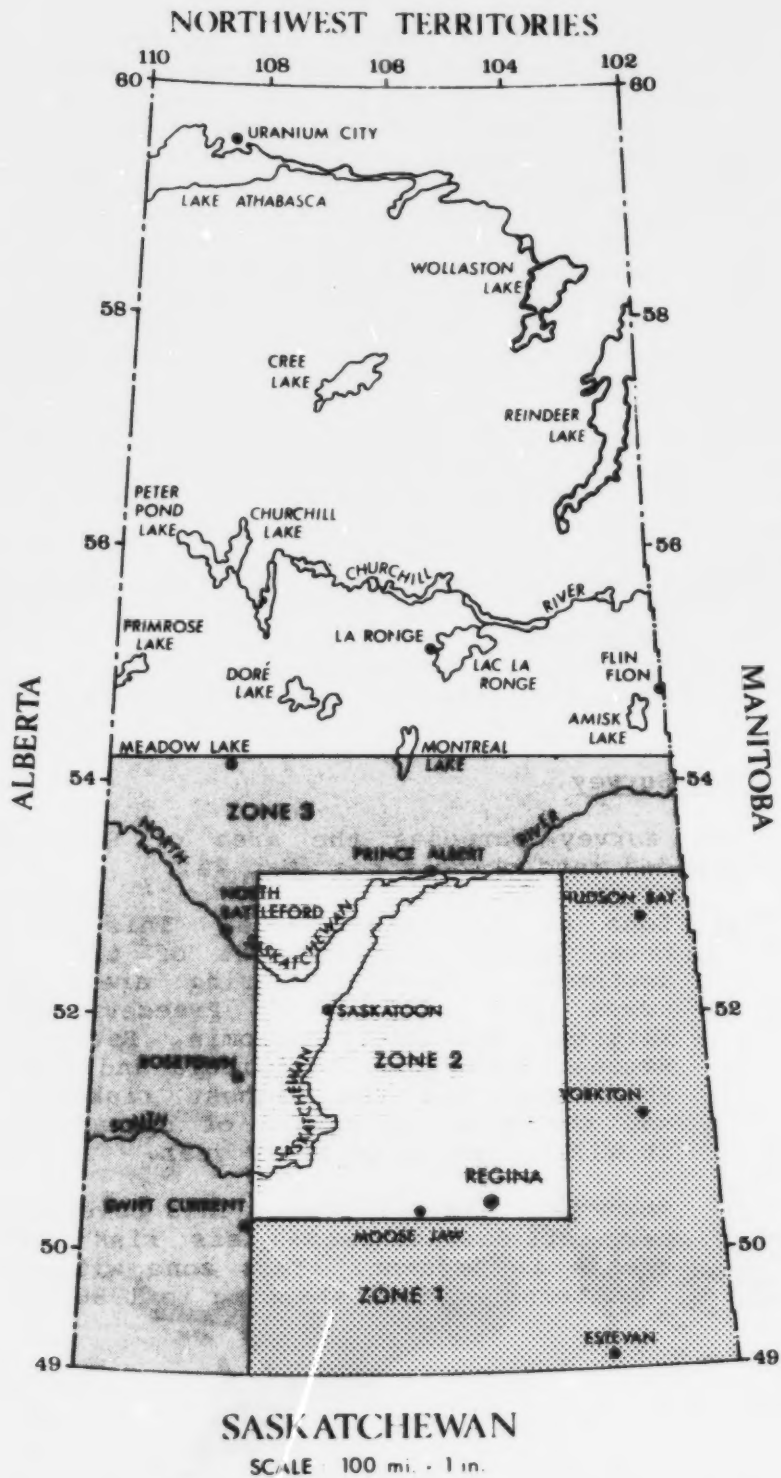
The program was divided into 3 phases:

1. DED survey
2. Bark beetle survey
3. Public information and extension program

1. DED Survey

For survey purposes the area of Saskatchewan was divided into three zones (Map #2).

- a) **Zone #1** - Critical zone. This is a 150 km. broad zone covering most of the eastern and southern borders, covering areas around the towns and cities of Preeceville, Kamsack, Yorkton, Melville, Moosomin, Estevan, Weyburn, Regina, Moose Jaw, Assiniboia and Swift Current. This zone has the highest risk of infection and the greatest hazard of spread if infected. It will be surveyed every year.
- b) **Zone #2** - Central zone. This covers the central part of Saskatchewan; less risk but the bark beetle is present. This zone will be surveyed in alternate years starting in 1986.



Map 2.

DUTCH ELM DISEASE SURVEY ZONES

- c) **Zone #3** - North and West zone. This covers areas along the western border and north of Prince Albert. This zone is slated for survey in 1987 and subsequently in alternate years.

2. Elm Bark Beetle Survey

It was decided that the distribution of native elm bark beetle (NEBB) is fairly well understood, and that further counts in the same areas were not necessary. Therefore the beetle survey should only be done for European elm bark beetle (EEBB) through pheromone traps.

3. Public Information and Extension Program

The DED surveillance and control program will work best when a well informed public and city municipalities are made aware of the need for wholehearted cooperation. In order to achieve this goal, the Forestry Division of Saskatchewan Parks and Renewable Resources should provide assistance for public information and extension by:

- a) producing and distributing informational brochures, posters, buttons, slides and video presentations;
- b) developing radio, television and newspaper advertising;
- c) providing staff for DED workshops to interested municipalities;
- d) maintaining a DED display to be made available for public showing in shopping malls, government buildings and at fairs.

1986 DED REPORT

1. DED Survey

- A total of 318 communities and 35 regional and provincial parks (Tables 1 & 2) were surveyed this year in Zones 1 & 2. The elms in general were in good condition this year, although many displayed serious aphid infestation. Samples showing vascular staining were taken from Canora, Osler, Estevan and Grand Coulee and were sent for testing to Ms. Gayle Jespersen, Plant Disease Specialist with Saskatchewan Agriculture in Regina. All were negative.
- Samples collected were plated and tested at the Plant Disease Laboratory of Saskatchewan Agriculture. All were negative.
- Aerial surveys with a helicopter from Forest Protection branch were conducted in the Cumberland delta, Qu'Appelle valley and Souris River valley. No flagging was spotted to warrant any sample to be taken.
- Letters were sent to towns with 'hazardous' trees asking them to prune off the dead branches before spring.

2. Elm Bark Beetle Survey

- 81 communities were selected as beetle trapping sites and 96 pheromone traps for European elm bark beetle were set up in early May (Table 3 & 4). Traps were retrieved in early August, beetles were separated from the traps and were sent to Dr. Bruce Neill at PFRA for identification. No European EBB was found in the traps. Native elm bark beetles were found in traps from Crooked Lake, Round Lake, Estevan, Roche Percee and Welwyn. The beetle in Welwyn is a new record this year (Table 4). A number of ash bark beetles were also found in various traps.
- Table 5 shows locations in Saskatchewan where NEBB and EEBB were trapped since 1980.

3. Public Information and Extension

a) DED Display

A DED display was prepared, containing:

- DED photographs obtained from PFRA Tree Nursery and updated for display.
- Posters.

The public information display was erected in the malls of the following places:

<u>Date</u>	<u>City</u>	<u>Location</u>
July 3, 86	Indian Head	PFRA Tree Nursery
6	Yorkton	Parkland Mall
9	Estevan	Shoppers Mall
10	Weyburn	Weyburn Square
15	Moose Jaw	Town & Country Mall
16	Swift Current	Wheatland Mall
Aug. 11-12	Regina	Cornwall Centre
13-14	Saskatoon	Market Mall
15-16	Prince Albert	Gateway North Plaza

In June, video tapes were also shown to customs officials at all ports of entry along the United States border, in order to stress the importance of checking firewood at the border.

b) DED Workshop

Since many cities were prepared to conduct their own survey, our staff assisted in setting up DED workshops for their staff. The cities which participated in this program were Yorkton, Melville, Estevan, Weyburn, Moose Jaw and Swift Current.

c) Brochures, posters, etc.

The following materials were developed for distribution. The posters and buttons were received too late for any meaningful distribution in 1986.

- Two video tapes
 - i) 'Stop DED' from Manitoba Agriculture
 - ii) 'The Beetle That Spreads DED' (Univ. of California) from P.A. City Parks and Recreation Department.
- DED pamphlets, posters and buttons by Forestry Division of Saskatchewan Parks and Renewable Resources.

d) Newsmedia

- News releases were sent to local newspapers before the display was arranged in the city.
- Interviews were conducted for the local papers and the City of Yorkton also arranged a T.V. interview for local news.
- Forestry Division and PFRA staff were interviewed on radio and T.V.

This awareness program generated a good deal of interest in the public and resulted in more public enquiries about elm trees. Most of these enquiries were handled by SPRR and PFRA staff.

Members of the DED Advisory Committee are requested to give their suggestions, comments or any changes for next year's program.

SUMMARY

- No incidence of DED was detected in 1986 either by ground or aerial survey.
- The American elms were generally in healthy condition except for some aphid infestation.
- Letters were sent to towns with "hazardous" trees asking them to prune dead branches before spring.
- NEBB were found in 5 locations and have now so far been confirmed in 30 locations (Table 4 and Fig. 1).

- NEBB at Welwyn is a new record this year.
- No EEBB were found this year; they have so far been confirmed previously in two locations, i.e. Port of Big Beaver and Shaunavon (Table 5 and Fig. 2).
- The DED display was very successful and generated more enquiries from public.

Madan Pandila
Saskatchewan Parks and
Renewable Resources
Box 3003 S0G 2K0
Prince Albert, Sask.
S6V 6G1
Tel.: 953-2357

Bruce Neill
PFRA Tree Nursery
Indian Head, Sask.

Tel.: 695-2284

Gayle Jespersen
Saskatchewan Agriculture
Walter Scott Building
3085 Albert Street
Regina, Sask.
S4S 0B1
Tel.: 787-4671

Cooperating Cities

Regina
Saskatoon
Prince Albert
Weyburn
Swift Current
Moose Jaw
Estevan
Melville
Yorkton

TABLE 1: TOWNS OR CITIES SURVEYED FOR DED IN 1986

Aberdeen	Crescent Lake	Govan
Abernathy	Crestwynd	Gravelbourg
Alameda	Crooked River	Gray
Algrove	Cudworth	Grayson
Allan	Cupar	Grenfell
Annaheim	Cymric	Gronlid
Arborsfield	Dafoe	Guernsey
Arcola	Davidson	Hamton
Assiniboia	Davin	Hanley
Avonlea	Delisle	Hawarden
Aylesbury	Dilke	Hazeldell
Balcarres	Disley	Hearne
Balgonie	Domremy	Hendon
Beaubier	Donavon	Heward
Bellegarde	Donwell	Hodgeville
Belle Plaine	Duck Lake	Holdfast
Bengough	Duff	Homefield
Bienfait	Dummer	Hubbard
Birch Hills	Dundurn	Hudson Bay
Birmingham	Earl Grey	Humboldt
Bladworth	Ebenezer	Hyas
Boharm	Edenwold	Imperial
Bredenbury	Edgeley	Indian Head
Briercrest	Elbow	Insinger
Broadview	Eldersley	Invermay
Brownlee	Elfros	Ituna
Bruno	Endeavour	Jameson
B-Say-Tah	Englefeld	Jasmin
Buchanan	Esk	Kamsack
Buena Vista	Estevan	Kandahar
Bulyea	Esterhazy	Katepwa Beach
Bushell Park	Estlin	Kayville
Canora	Eye brow	Keeler
Carievale	Fenwood	Kelliher
Carlyle	Fifelake	Kelvington
Carnduff	Fillmore	Kenaston
Caronport	Findlater	Killdeer
Carrot River	Foam Lake	Kincald
Central Butte	Forget	Kinistino
Ceylon	Fort Qu'Appelle	Kipling
Chagoness	Fort San	Kronau
Chamberlain	Foxford	Kuroki
Chelan	Francis	Lac Vert
Choiceland	Frobisher	Lake Lake
Churchbridge	Gainsborough	Lafleche
Clavet	Gerald	Lake Alma
Codette	Girvin	Lake Lenore
Colgate	Gladmar	Lampman
Colonsay	Glen Ewen	Langenburg
Coronach	Glenside	Lanigan
Craik	Goodeve	Lawson
Crane Valley	Gorlitz	Lebret

Lemberg	Pelly	Stockholm
Leross	Pense	Stony Beach
Leroy	Penzance	Stonoway
Limerick	Percival	Storthoaks
Lintlaw	Peterson	Stoughton
Lumsden	Pike Lake	Strasbourg
McCord	Pilger	Strongfield
McKague	Pilot Butte	Sturgis
Macdowall	Plunkett	Swift Current
McNutt	Pontrilas	Sybouts
Macoun	Porcupine Plain	Tadmore
Mankota	Preciville	Tantallon
Manor	Punnichy	Tarnopol
Marchwell	Quill Lake	Theodore
Margo	Quinton	Tisdale
Marieval	Radville	Togo
Markinch	Rama	Tribune
Marquis	Raymore	Trossachs
Martensville	Red Jacket	Tugaske
Maryfield	Redvers	Tuxford
Marysburg	Reynaud	Tway
Mawer	Rhein	Tyvan
Masenod	Riceton	Usherville
Meacham	Richardson	Valparaiso
Melville	Riverhurst	Vantage
Midale	Rockglen	Venn
Mikado	Rokeby	Veregin
Mileston	Rose Valley	Vernwood
Minton	Rouleau	Viceroy
Mitchelton	Runnymede	Wadena
Montmartre	St. Brieux	Waka
Moose Jaw	St. Denis	Waldron
Moosomin	St. Isadore-de-Bellevue	Wapella
Mossbank	Saint Front	Warman
Muenster	Sagehill	Watrous
Naican	Saltcoast	Watson
Neudorf	Scout Lake	Wawota
New Osgoode	Sedley	Weekes
Nipawin	Semans	Weldon
Nokomis	Sheho	Weyburn
Norquay	Shipman	White City
Nutmountain	Silver Park	White Fox
Ogema	Simpson	White Spruce
Okla	Sintaluta	Whitewood
Orcadia	Snowden	Wilcox
Osler	Southey	Willowbrook
Oungre	Spalding	Willow Bunch
Outlook	Springside	Wishart
Oxbow	Spring Valley	Wolseley
Palmer	Spy Hill	Wood Mountain
Parkerview	Stalwart	Wroxton
pathlow	Star City	Wynyard
Peesane	Steelman	Yarbo
		Yellow Creek
		Yorkton
		Young
		Lenon Park

**TABLE 2: Provincial and Regional Parks Surveyed for DED
in 1986**

Regional Parks

Assiniboia
Avonlea
Bengough
Ceylon
Danielson
Ituna
Jean Louis Legarde
Kipabiskau
Kurokis
Lady Lake
Last Mountain
Leroy Leisureland
Lucien Lake
McNab
Main Prize
Mossbank
Outlook
Pasquia
Rockin Beach
St. Brieux
Sturgis
St. Victor
Tisdale
Valley Park
Waldsea Lake
Watrous
Whitesand
Wood Mountain
Wood Mountain Historical
Wynyard

Provincial Parks

Besant Campground
Buffalo Pound
Douglas
Greenwater
Mossbank Picnic Site
Rowan's Ravine

TABLE 3: LOCATION OF ELM BARK BEETLES FOUND ON
PHEROMONE TRAPS IN SASKATCHEWAN IN 1986

Location	# of traps set	# of Bark Beetles found	
		Native	European
Antler	1	¥	
Assiniboia	1	0	
Battleford	1	0	
Bengough	1	0	
Bienfait	1	¥	
Big Beaver	1	¥	
Broadview	1	0	
Carievale	1	¥	
Carlyle	1	0	
Carnduff	1	¥	
Churchbridge	1	¥	
Climax	1	¥	
Coronach	1	0	
Crooked Lake	1	2	
Cypress Hills	1	0	
Esterhazy	1	¥	
Estevan	3	5	
Fleming	1	¥	
Fort Qu'Appelle	1	0	
Frontier	1	0	
Gainsborough	1	¥	
Grenfell	1	0	
Indian Head	2	0	
Kamsack	1	¥	
Kenasee	1	0	
Lake Alma	1	0	
Lampman	1	0	
Langenburg	1	¥	
Lloydminster	1	0	
Lumsden	1	0	
MacNutt	1	0	
Mankota	1	¥	
Maple Creek	1	0	
Marieval	1	0	
Maryfield	1	¥	
Melfort	1	¥	
Melville	1	0	
Midale	1	¥	
Minton	1	0	
Moose Jaw	3	0	
Moosomin	1	0	
North Battleford	1	0	
Northgate	1	¥	
North Portal	1	¥	
Oxbow	1	0	
Oungre	1	0	
Prince Albert	1	0	
Port of Big Beaver	2	0	

¥ - Traps missing

Location	# of traps set	# of Bark Beetles found	
		Native	European
Port of Carievale	1	0	
Port of Climax	1	¥	
Port of Coronach	1	0	
Port of Estevan	1	0	
Port of Dungere	1	0	
Port of Torquay	1	¥	
Port of Willow Creek	1	¥	
Port of West Poplar	1	0	
Radville	1	¥	
Redvers	1	0	
Regina	3	0	
Regway	1	¥	
Rocanville	1	0	
Roche Percee	1	18	
Round Lake	1	3	
Saskatoon	4	0	
Shaunavon	2	0	
Spy Hill	1	0	
Storthoaks	1	¥	
Stoughton	1	0	
Swift Current	2	0	
Tantallon	2	0	
Togo	1	¥	
Torquay	1	¥	
Val Marie	1	¥	
Wawota	1	0	
Welwyn	1	1*	
Weyburn	2	0	
Whitewood	1	0	
Wolseley	1	¥	
Wroxton	1	0	
Yorkton	2	0	
	<u>96</u>	<u>29</u>	<u>0</u>

¥ - Traps missing

* - New recording for NEBB

TABLE 4: Locations in Saskatchewan where the native elm bark beetle (NEBB) or the smaller European elm bark beetle (EEBB) have been trapped since 1980.

Location	No. of NEBB trapped						
	1980	1981	1982	1983	1984	1985	1986
Carlyle	1				2		
Carnduff	1				2		
Crooked Lake	8	103		3			2
Estevan		189	1		2		5
Fairlight				1		2	
Foam Lake					1		
Fort Qu'Appelle						13	
Gainsborough			3		1		
Lampman						1	
Lanigan				1			
Lumsden				1			
Maryfield					1		
Midale			1				
Moose Jaw		22		1			
North Portal			2	2			
Outlook		384	5	4	26		
Oxbow	1	19	72		1		
Pangman			1				
Port of Carievale			2		1		
Port of Estevan			1				
Preeceville					1		
Redvers	1	1			1		
Regina							
(Sherwood Forest)		8	5+				
			(10,000)*				49
							*estimated in elmwood pile
Roche Percee			88	59	24		18
Round Lake	51	49		3		4	3
Saskatoon			9				
Spy Hill			1				
Stoughton			2		1		
Tantallon						2	
Welwyn							1
Wolseley				1			

EEBB

Port of Big Beaver	1	
Shaunavon		1

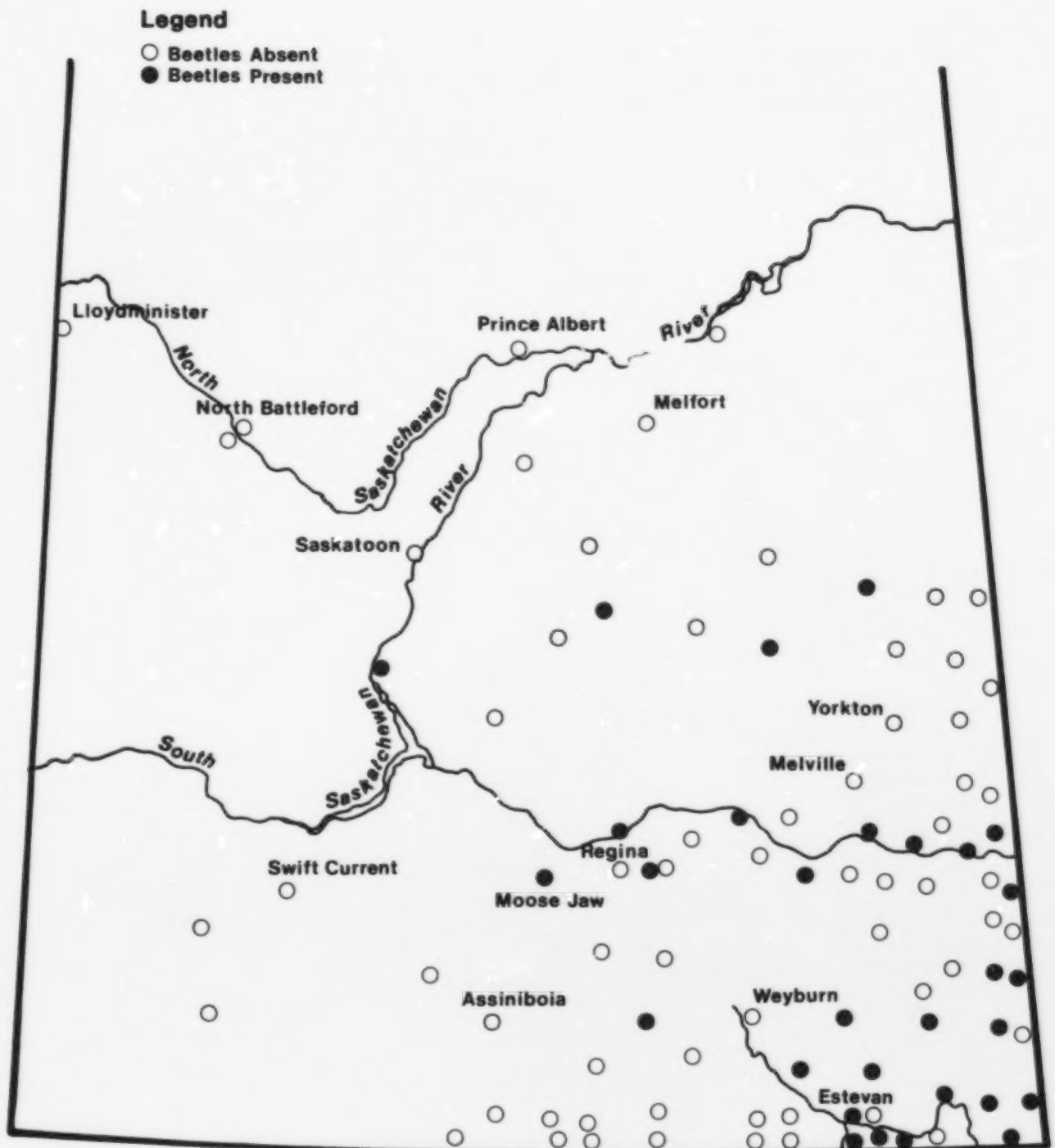


Figure 1. Trap Locations for the Native Elm Bark Beetle (*Hylurgopinus rufipes*) and the Locations where Beetles were found 1980-1986.

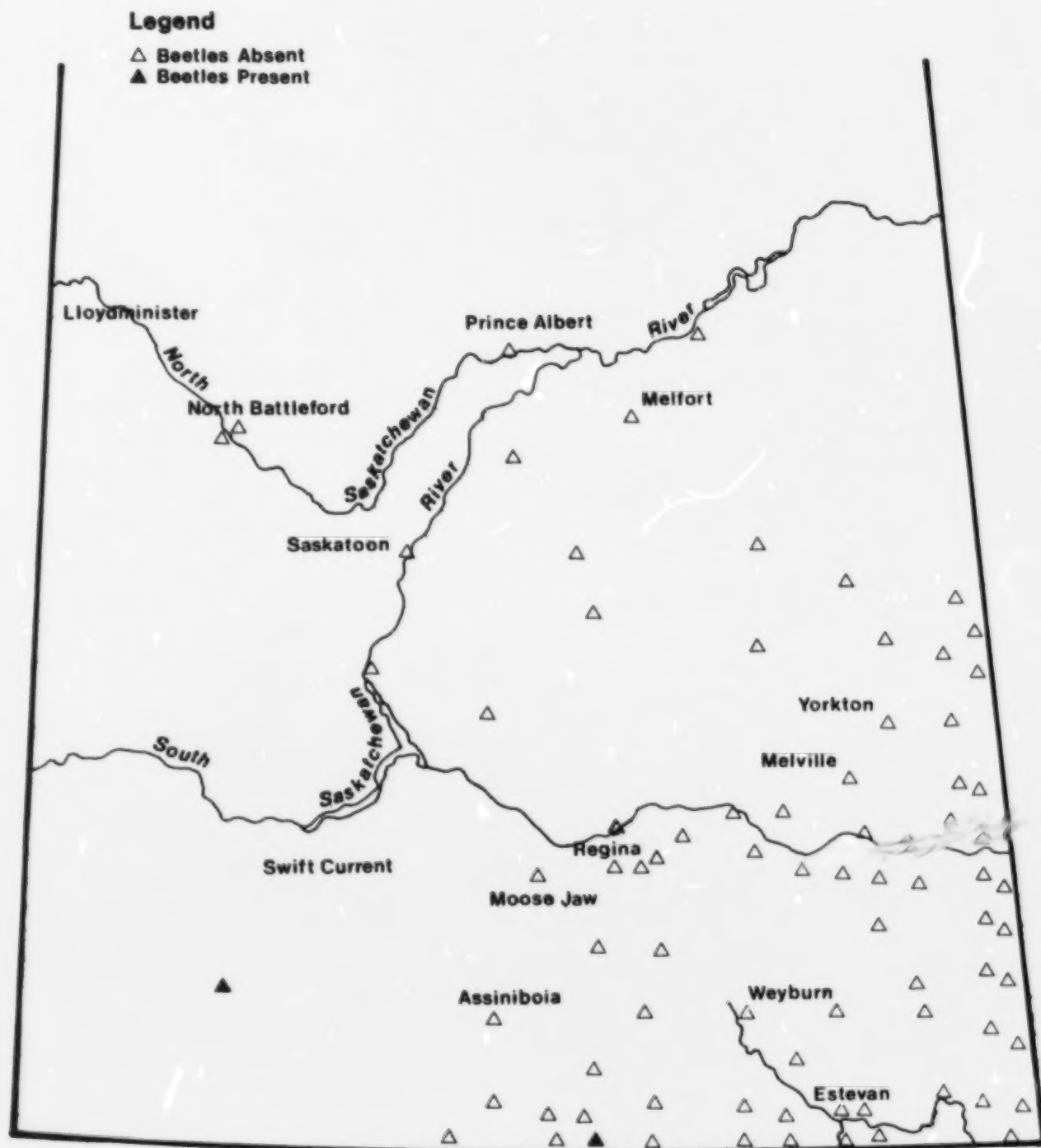


Figure 2. Trap Locations for the Smaller European Elm Bark Beetle (*Scolytus multistriatus*) and Locations where Beetles were found 1981 - 1986.



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DED SURVEILLANCE REPORTS
FROM COOPERATING CITIES

CITY OF REGINA

Dutch Elm Disease Survey - Regina 1986

The surveys undertaken by the City of Regina in 1986 to detect Dutch Elm Disease (D.E.D.) followed the same patterns as in the past four years. Sticky traps from Scentry Inc. were set randomly within the city limits and Sherwood Forest (rural campground 10km west of Regina) to monitor the presence of the native elm bark beetle, Hylurgopinus rufipes, and/or the European elm bark beetle, Scolytus multistriatus (Table 1). Trees showing flagging patterns similar to wilt disease were examined and when necessary were sent to the Provincial Lab for identification.

The monthly verification of the twenty-six (26) city sites failed to reveal any elm bark beetles (Table 2). The five (5) sites from Sherwood Forest showed an 83% reduction in beetles (Hylurgopinus rufipes) caught in 1986 from 1985 (Table 2) with 49 beetles.

The American Elms tagged as potential wilt disease carriers were all identified as negative for D.E.D. One case of *Dothiorella* was detected. Two canker infections were present on repeated instances (Table 3).

Stress induced secondary factors such as bacterium wetwood, canker infections (*Nectria*, *Cytospora*) and many root fungi have contributed to severe dieback in many American Elms. Removal of this dead wood is imperative in the prevention of D.E.D. by minimizing overwintering sites of the elm bark beetles. As such, considerable attention has been given to providing maintenance crews priority sites for removal and clean up at dieback. This will continue to be a major priority until such time that the elm population recovers from the recent series of climatic extremes.

Roger J. Ducharme
PEST CONTROL OPERATIONS

TABLE 1

ELM BARK BEETLE TRAP LOCATIONS

City of Regina

1. 308 Coldwell Road
2. 22 Stapleford Crescent
3. 131 Merlin Crescent
4. 728 Argyle Street
5. 720 Grey Street
6. 1345 Royal Street
7. 1245 Cameron Street
8. Regina Golf Course (11th Ave.)
9. 2144 Cornwall Street
10. Regina Cemetery
11. Victoria Park (Cornwall Entrance)
12. 14th Avenue & Broder Street
13. 2604 Elliott Drive
14. 2100 Toronto Street
15. 185 Leopold Crescent
16. 2837 Wascana Street
17. 2151 Montague Street
18. Lakeshore and Avenue C.
19. 2735 Assiniboine Avenue
20. 4015 Garnet Street
21. 227 McKee Crescent
22. 51 Daffodil Crescent
23. 133 Munro Place
24. 18 Motherwell Crescent
25. 1834 Bond Street
26. Regina Correctional Centre

Sherwood Forest

1. Greenwood Subdivision (Friar's Tuck)
2. Robin's Bend (#24)
3. West of Ball Diamond
4. Sherwood Road (#23)
5. Sleepy Hollow (Centre)

TABLE 2

ELM BARK BEETLE TRAP COUNTS - 1986

City of Regina

May to September	0
June	0
July	0
August	0
September	0

Total	0

Sherwood Forest

May to September	0
June	0
July	0
August	0
September	49

Total	49

TABLE 3

WILT DISEASES SAMPLE ANALYSIS - 1986

<u>Sample No.</u>	<u>Location</u>	<u>*Lab Results</u>
R86-001	1307 Princess Street	Cytospora canker
R86-002	2804 Regina Avenue	Negative for D.E.D.
R86-003	30 Block Albert (Wascana)	Negative for D.E.D.
R86-004	30 Block Albert (Wascana)	Negative for D.E.D.
R86-005	2905 Rae Street	Negative for D.E.D.
R86-006	3126 Rae Street	Cytospora canker
R86-007	Hill & Albert St. (Corner)	Negative for D.E.D.
R86-008	3238 Albert Street	Negative for D.E.D.
R86-009	237 Frontenac Street	Dothiorella Spp
R86-010	404 Frontenac Street	Negative for D.E.D.
R86-011	2331 Ottawa Street	Botryodiplodia canker
R86-012	2352 Ottawa Street	Botryodiplodia canker
R86-013	1500 College Avenue	Bacterium wetwood
R86-014	15th Ave. & Scarth St. (N.E. Corner)	Negative for D.E.D.

*Fungal identification often not possible due to sample contamination and/or due to the nature of the fungus in culture.

**CITY OF WEYBURN
DUTCH ELM DISEASE SURVEILLANCE PROGRAM
1986**

Introduction

Weyburn's Urban Forest consists of approximately one-third American Elms. In order to maintain both the aesthetics, and value as a city, these trees must be protected from D.E.D. Weyburn is at a relatively high risk as it is located in the southeast corner of Saskatchewan and along the Souris River Valley. This area is defined by Saskatchewan Parks and Renewable Resources as being a critical zone which is at the highest risk of infection. There is much concern that the elm bark beetle will move up the Souris River Valley towards Weyburn, which gives the City an even higher risk.

Program Details

With the seeming inevitability of D.E.D., Weyburn has started a program to deal with the situation. At this time, preventative maintenance of the American Elms is the main portion of the Program. This consists of both sanitation and corrective pruning to maintain a population of healthy elms. As well, plantings of elms have been slowed down, with the use of alternative tree species. Weyburn still has a large amount of elms in the nursery which will be used as replacements and mixed plantings, as well as some street plantings. With this type of program, the amount of city-owned elms will be kept at a point where good maintenance practises are possible. Also, if D.E.D. does become a problem, Weyburn will have enough other tree species to ensure a healthy urban forest remains.

Results

Since the provincial government started their D.E.D. surveillance program, no elm bark beetles have yet been found in Weyburn. This is fortunate considering that Estevan, located less than 100 km down the Souris River Valley, has found beetles four out of the last seven years. There was one suspect tree spotted in Weyburn in mid-August of this year, however, upon close inspection, no staining was evident and no sample was submitted. This tree is being watched very closely by City Staff. The pruning and sanitation effort was moderately successful this year with approximately one-sixth of the American Elms being completed. This will continue throughout the winter months with a projected completion amount of more than one-half by early spring.

Future Plans

Plans for 1987 include the City of Weyburn starting their own D.E.D. and Elm Bark Beetle Surveys along with the completion of the sanitation and pruning of all elms located in the City. Also, an annual report of the results of the program will be submitted at the D.E.D.A.C. meeting each fall. It is felt that a more accurate account of D.E.D. and elm bark beetles in Weyburn can be achieved by the City doing their own survey, with the help of the provincial government agencies.

Conclusion

In retrospect, 1986 has been a successful year for the City of Weyburn. A fair amount of progress has been made in all areas concerned with D.E.D. Better awareness of the problem being faced has led to a more intensive program which will help greatly in future years in the fight against Dutch Elm Disease.

Dan Bruinooge
PARKS PLANNER
City of Weyburn

DUTCH ELM DISEASE REPORT

CITY OF PRINCE ALBERT

We had investigated approximately 30 calls regarding dieback in our American Elms. None have shown any signs of staining thus ruling out the presence of Dutch Elm Disease.

Although two boulevard trees checked were diagnosed as Armillaria Root Rot, the other trees checked throughout the city, that displayed discoloration, were mainly due to stress or wind damage.

The infestation of Cankerworm this year was light to heavy with the following observation. The movement of the moth in the fall is in a predominant direction of prevailing winds, therefore for tree banding, our crews would band one additional city block of trees to the south and east of any heavy infestation.

Some Tent Caterpillars were also discovered this spring and our crews will be checking the Aspen stands next spring to check for egg bands.

Peter Kabatoff
Parks and Recreation Department
City of Prince Albert

CITY OF SASKATOON

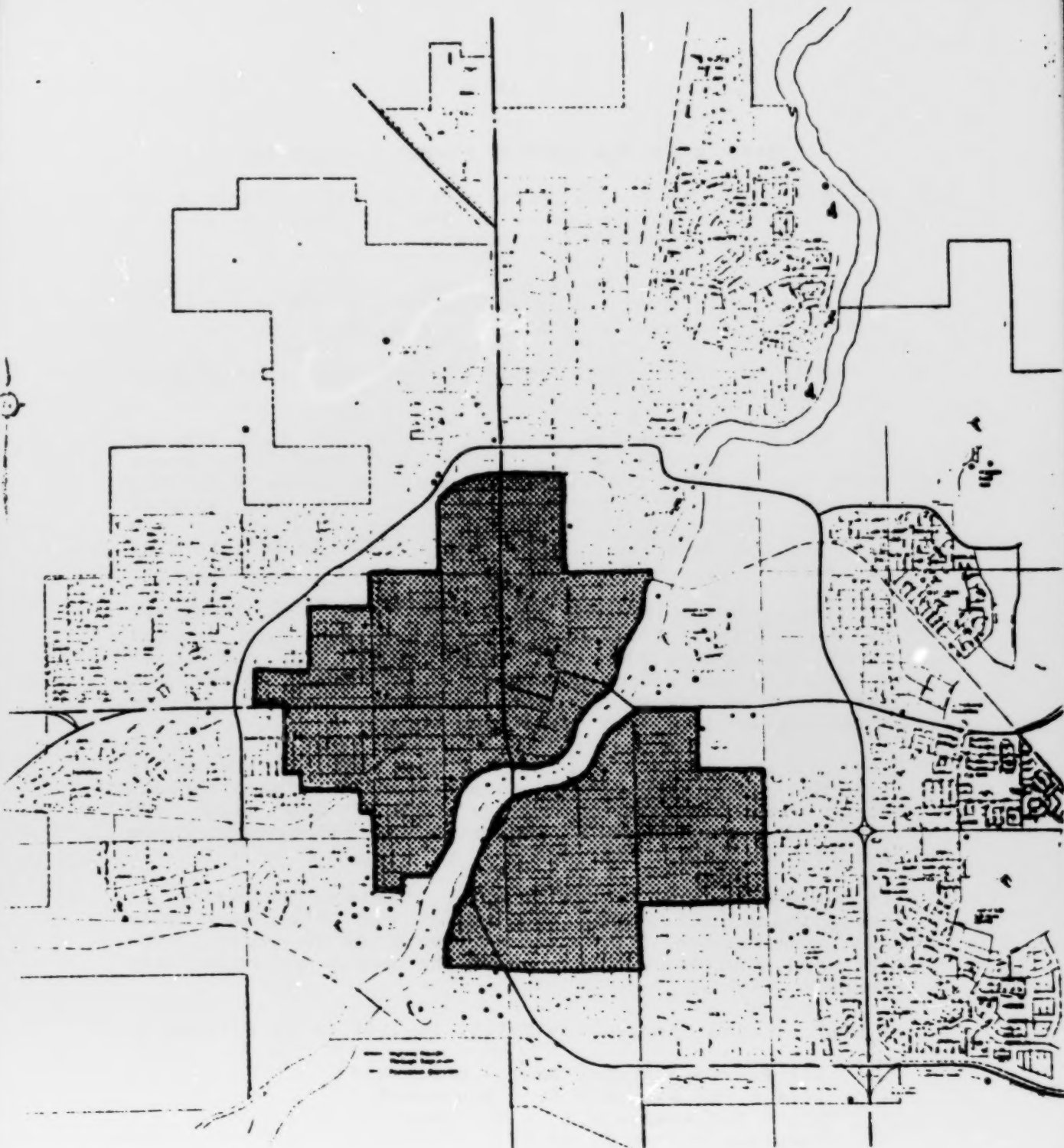
During the month of June, a detailed count of street trees within the area outlined in Figure 1 was made. The purpose of this inventory was to determine block by block the elm population, size, condition, etc. in order to prepare a street tree pruning schedule in the areas with the highest concentration of American Elms. Based on the number of street trees (American Elms, Manitoba Maples, etc.), it would take approximately 17 years to complete the pruning cycle based on our current resources. The recommended pruning frequency should be between 5-7 years. This part of the Urban Forestry Program will be examined by the Administration during winter.

The DED Survey Program began in July with samples being initially sent to Winnipeg, however, due to overload in Winnipeg, samples were sent to Gayle Jespersen, Plant Disease Specialist, Saskatchewan Agriculture. Sixty (60) samples were checked and no DED was reported during 1986. The entire city was covered once during July and August. The City will continue to support this DED Survey Program.

The Administration is currently drafting a new tree bylaw and tree policy which will provide greater control and management of our City trees.

The Department is currently reviewing the street tree planting program and other aspects of the Urban Forestry Operation to determine the desirability to carry out a comprehensive Urban Forestry Management Study.

D.A. Scott
CITY OF SASKATOON



*Shaded section indicates highest concentration of American Elms - 12,900
Other Areas - 13,245
Total American Elms 26,145

City of Saskatoon

1986 DUTCH ELM DISEASE SURVEY - MOOSE JAW

Elm trees in Moose Jaw continued to suffer dieback in 1986. Several mature trees failed to leaf out at all this spring and some of them died.

While moisture conditions were more favorable this past summer than in 1985, elms in Moose Jaw had to contend with high aphid populations, as well as some cankerworms.

A number of trees were found with wet wood and/or large cracks in the trunk.

The D.P.R.R. Dutch Elm Disease Information team visited Moose Jaw July 14 & 15. They instructed City parks staff on D.E.D. transmission, symptom recognition and how to obtain and prepare and send elm twig samples to the laboratory. An informational display at the mall and the coverage by local media assisted in informing citizens.

A survey of boulevard and Parks trees was conducted by Parks staff from June to mid-August. Also several trees throughout the City were checked for D.E.D. as a result of calls from concerned individuals. No staining was found on any of the samples taken. Several private trees appeared to have "malathion burn".

The pruning program for City trees will operate as in 1985-86. Pruning begins in November and continues through March with emphasis on the removal of dead wood from elms. The Department is requesting an increase in funds for pruning in the 1987 budget.

If approved, the increase would enable a reduction in the pruning cycle. At the present rate City-owned trees are pruned once approximately every seven years. The proposed increase would reduce the cycle to about five years.

A list of elms sampled for D.E.D. in 1986 is as follows:

- 478 Fairford Street East - boulevard
- 1016 - 4th Avenue N.E. - boulevard
- 233 - 3rd Avenue N.E. - boulevard
- Crescent Park S.E. of "Y"
- 1009 Coteau Street West - boulevard
- Riverside Drive - Wellesley tree nursery

Elm trees removed in 1986:

1305 Albert Street
1172 Duffield Crescent - large split in trunk
1205 - 4th Avenue N.E.

Trees at the above locations will be monitored in 1987.

We appreciate the assistance of the D.E.D. team in staff training and raising public awareness of the danger of D.E.D. in our community.

Peter Stryker
Park Superintendent

Jean Schneider
Park Program Supervisor

Parks and Recreation Department
City of Moose Jaw